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DRIVER EDUCATION CURRICULUMS IN CANADA

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ABSTRACT

The Driver Education curriculums of the following five provinces are examined: Québec, Ontario, Prince Edward Island, Alberta and Saskatchewan. As defined in this paper, a curriculum combines a program's objectives and its course of study. A three-step approach is taken to each Canadian curriculum : (1) charting the main topics and sub-topics of the course with their individual objectives, (2) describing and commenting on the salient points of the course of study, (3) comparing program objectives with course content. The conclusion will offer a comparison of the provinces at the level of time spent teaching universal aspects of Driver Education programs.

RÉSUMÉ

Suite à une enquête pancanadienne sur l'enseignement de la conduite automobile et la sécurité routière, les plans de cours des cinq provinces suivantes sont examinés et analysés en fonction de la cohérence contenus/objectifs : Québec, Ontario, Île-du-Prince-Edouard, Alberta et Saskatchewan. Un plan de cours, tel que nous le définissons, comprend les objectifs d'un programme et le plan d'étude. L'analyse de chaque plan de cours se fait en trois étapes : (1) dresser un tableau des principaux sujets traités dans le cours avec leurs objectifs spécifiques, (2) décrire et commenter les points saillants du plan de cours, (3) comparer les objectifs du programme avec le contenu du cours. La conclusion offre une comparaison des plans de cours provinciaux au niveau du temps alloué à l'enseignement des attitudes, des connaissances théoriques et des habiletés techniques - trois principaux éléments inhérents à un cours de conduite automobile.

INTRODUCTION

The aim of this study was to evaluate Canadian Driver Education (DE) curriculums by estimating their degree of internal consistency. This is a sub-study of a research project at the Université de Montréal which seeks to evaluate the short and long-term impact of DE programs. [1a, 1b]

A cross-country survey in March and April 1983 revealed that only five out of ten provincial governments had developed curriculums for school or commercial programs (Table 1). These curriculums usually state objectives, specify course contents and suggest teaching methods. British Columbia, Nova Scotia, New Brunswick, Manitoba and Newfoundland teach Driver Education (DE) without a curriculum, using Sportsmanlike Driving [2] as a basic guide. The curriculums of private organizations like the Canada Safety Council were not included in this study.

The conclusion reached after examining six curriculums from five provinces was that none of the course contents adequately met stated objectives and that, as a result, all six curriculums suffered from a lack of internal consistency.

Table 1. Six Provincial Driver Education Curriculums

CURRICULUM	PROVINCE	DEVELOPED AND ADMINISTERED BY	TYPE OF SCHOOL
Programme du cours de formation personnelle de base en conduite automobile (May 1978)	Quebec	Régie de l'assurance automobile du Québec	Commercial Schools
Driver and Traffic Safety for Saskatchewan Youth (July 1977)	Saskatchewan	Department of Education	High Schools
Driver Education Program (1982)	Prince Edward Island	Department of Education	High Schools
1) Driver Training Curriculum Guide (?) 2) Curriculum Guide for Driver and Traffic Safety Education 10 (1982)	Alberta	Department of Transportation Department of Education	Commercial Schools High Schools
Teacher's Manual for the Driver Instruction Program in Ontario Secondary Schools (1972)	Ontario	Ministry of Transportation and Communications	High Schools

METHOD

The theoretical component of individual curriculums was singled out for examination ; the practical and observation components, where applicable, were set aside.

The method used to estimate the internal consistency of each curriculum comprised the following steps :

(1) drawing up a chart of course contents
(2) describing the course structure and recommended pedagogical approach
(3) discussing course content in terms of time spent meeting individual objectives as stated in the curriculums.

RESULTS

QUEBEC

The current 1978 Quebec curriculum [3], which was designed for use in commercial driving schools, has a complex structure. The theoretical phase is made up of four thematic blocks - the driver, driving, laws and the vehicle - and one "miscellaneous" block related to course organization. Each block contains a certain number of topics called "modules" which can be taught in one, two or three periods. The course unfolds topically from module to module (see Table 2) rather than in blocks; a theme such as "The Driver" may get interrupted by another theme, then resume later on. The pedagogical approach called for throughout the course of study is the standard transmission of knowledge; the method is the lecture format, with prepared questions at the end of the period.

Three general objectives are mentioned at the outset : "Develop in the student a heightened sense of social responsibility by favouring the development of a positive attitude toward road and highway use ; develop

the students' individual qualities in order to turn them into conscientious drivers ; give the student theoretical knowledge and develop his driving skills by favouring greater personal discipline towards road safety." These objectives, valid in themselves, are couched in obscure language. They lay emphasis first on the development of attitudes, secondly on theoretical knowledge and skills. In the actual course of study, only 2 out of 20 modules touch on attitudes (for 100 min. or 6.66% of 25 hours of theory) ; 200 min. or 12.92% are devoted to technical skills, as opposed to 1,050 min. or 70% to knowledge. Hence the largely pragmatic course of study does not follow through on stated objectives.

Table 2. Quebec Course of Study

Module	Periods
Introduction	1
Signalling	2
The Laws of Physics	2
Stopping Distances	1
Vision	1
Preparing to Drive	1
Basic Manoeuvres	1
Technology of Driving	3
Adverse Driving Conditions	2
Rules of the Road	3
The Psychology of the Driver	1
Health	1
Driving at Night	1
Emergencies	1
Parts of a Vehicle	1
The Motor and how it Functions	1
The Transmission	1
The Wheels	1
Car Maintenance	1
Car Purchase and Financing	1
Insurance	1

ONTARIO

Ontario's secondary school curriculum [4], published in 1972, resembles Quebec's curriculum in two specific ways : (1) the recommended pedagogical approach has the teacher transmitting a specific content to the student and (2) individual course subjects (or themes) are not taught consecutively but are broken up. Of the thirteen subjects listed in the block syllabus, ten relate to the theoretical part of the course (see table 3). These subjects basically convey information to the student. There is no real theoretical preparation for the manoeuvres which will be performed in the car.

As far as general objectives are concerned, there is only one central objective : "to provide students with the knowledge, the skills and most importantly the attitudes necessary for the safe and efficient operation of the automobile" [5]. Clearly, the development of good attitudes is given special emphasis. Yet only 11.11% (160 min.) of the course is concerned with attitudes (mainly in relation to alcohol and drugs). Technical skills such as basic manoeuvres are not taught at all in the theoretical portion of the course. As for knowledge, which is one of three components in the global objective, it accounts for 75% (1080 min.) of the course content.

Table 3. Ontario Course of Study

High School Driver Instruction Course

Subject (Alphabetical Order)	Periods
1. Alcohol and other drugs	2: Driving and Drinking : Driving and Drugs.
2. Buying, Owning and Maintaining your car	3: How the Wheels Move, Buying your own Car, Maintaining your own Car.
3. Driving Practices	6: Defensive Driving ; Highway Driving ; Driving in Cities and Towns ; Driving on Freeways ; Weather Wipe-Out ; The pedestrian and the Driver.
4. First Aid and Collision Reporting	2: First Aid to those Injured in Automobile Collisions ; Collision Reporting.
5. How to Get and Keep your Driver's License	8: Getting your Driver's Licence, The Need for a Safe Attitude, Traffic Signs and Road Markings, Rules of the Road (2), Safe Attitudes for Safe Driving, Test for an Instruction Permit.
6. Insurance	3: Insurance Needs; Insurance Rates and Classes ; Motor Vehicle Accident Claims Fund.
7. Law and its Application	4: Traffic Law Legislation ; Application of Traffic Laws ; The Demerit Point System ; Enforcement of Traffic Laws.
8. Laws of Physics and their Effect on Driving	3: Friction, Inertia and Centrifugal Force, Kinetic Energy, Force of Impact, Gravity ; Stopping Distances (2).
9. Need for Driver Instruction	1: Introduction to the Course
10. Physical Fitness for Driving	3: To See and Be Seen ; Physical Fitness ; Use of Psychophysical Testing Equipment.

Hence the Ontario curriculum fails the triple mandate of its central objective; it is mainly involved in transmitting knowledge.

SASKATCHEWAN

Saskatchewan's high school driver education curriculum [6] includes 30 hours of theory. The course content is divided up into seven units or themes ; each unit includes anywhere from three to ten subjects referred to as "concepts" (See Table 4). Each concept includes pre/post self assessment sheets and one or more individualized learning guides. Obviously the student is expected to be actively engaged in his/her learning process. Objectives set for individual units and concepts are expressed in terms of changes to be brought about in the behavior of students. For example : "The student will identify the factors involved in following and determine techniques to minimize possible conflicts". These changes, triggered by the acquisition of new knowledge, take the form of tasks which students must accomplish in order to participate in the highway system. At all times, these objectives emphasize the interaction between the student and his environment, rather than between the student and the instructor. One aspect of driver education which is given considerable attention in this particular curriculum is the subject of collisions--types of collisions, preventive measures, how to minimize impact, etc.

Hence the curriculum is designed as a tool for the student's use, rather than as a set of facts which he/she must passively absorb.

The overall objectives set for the Driver Education Program in Saskatchewan are the following :

1. To help pupils acquire the insights, motivation and good attitudes which are the foundations of responsible driving.

2. To provide pupils with the knowledge and skills necessary for capable performance as vehicle operators.
3. To help pupils acquire the ability to make wise decisions in situations which could lead to impaired or dangerous driving (involving alcohol and other drugs, fatigue, emotions and vehicle failure) [7].

In the actual course of study, subjects related to the development of good attitudes (the first objective) take up to 180 minutes or 10% of the program. Ninety percent of the program is devoted to subjects related to knowledge and technical abilities which together make up the second objective. The third objective cannot be fulfilled independantly of the first two objectives.

Table 4. Saskatchewan Course of Study

Driver and Traffic Safety Education 10 (1977)

Unit	Concepts
A. Basic Elements	1-3 : Highway Transportation System, Traffic Control, Vehicle Dynamics
B. Traffic Interaction	1-10 : Human Functions, Lane Placement, Intersecting, Following, Being Passed, Parking, U-Turns, etc.
C. Critical Driving	1-3 : Response Analysis, Traction Loss, Vehicle Malfunctions
D. Traffic Environment	1-5 : Trip Planning, City Driving, Residential Area, Rural Highways Country Roads, Freeway Driving
E. You and other Drivers	1-7 : Vision, Physical Fitness, Distractions, Emotions, Risk, Acceptance, Alcohol, Drugs
F. Crash Reduction	1-7 : Highway Collisions, Minimizing Impact forces, Vehicle Inspection and Maintenance, Collision Scene, Financial Responsibility, Ownership and Selection Responsibility, Consumer Education
G. Improving Driving Conditions	1-4 : Traffic Engineering, Traffic Law and Enforcement, Vehicle Engineering, Driver Licensing

So the Saskatchewan curriculum includes a theoretical course of study which is functional, demanding and centered (up to 90%) on one objective.

ALBERTA

Driver Education in Alberta high schools [8] is based, at the theoretical level, on a ten-unit, 30-hour course of study which involves from one to ten topics per unit (See Table 5). While unit objectives are stated in terms of what the instructor must "demonstrate, develop, etc.", the content is worded in terms what the student must accomplish. The instructor is not offered any specific guideline on how to teach the course content which is nonetheless organized in a logical and systematic manner.

Table 5. Alberta High School Course of Study

Driver and Traffic Safety Education 10 (1982)

Unit	Topics
1.Introduction	7 : Historical background, history of the automobile, driver characteristics and responsibilities, safety, hazard perception, first aid
2.The Driver and Specific Elements of Society	1 : Relations and attitudes to : other drivers, pedestrians, etc.
3.Driving Techniques	8 : Predriving habits, starting, stopping, backing up, turns, passing, parking, hills and curves, positioning a vehicle in traffic, traffic circles
4.The Driver and Society	6 : Traffic laws, traffic control devices, law enforcement, natural laws, safe automobile insurance
5.The Individual Driver	6 : General characteristics that affect driving, physical defects, fatigue and stress, alcohol, drugs, maturity
6.The Driver and the Car	6 : Buying a new or used car, ownership, basic operation, preventive maintenance, trip planning, fuel conservation, new developments
7.Conditions and Driving Skills	10 : Hazardous road and weather conditions, reduced visibility, city, country and freeway driving, driving loaded vehicles, animals, other vehicles
8.The Traffic Accident : Before, at the Scene and After	4 : Traffic accidents, at the scene, consequences of accidents, winter survival
9.New Approaches to Reduction of Traffic Accidents	6 : Defensive driving, driving decisions, emergency manoeuvres, safety devices, the superior driver, enforcements of regulations
10.Motorcycling	

Overall course objectives are "(1) to develop in students attitudes of safety, courtesy and responsibility in the operation of a motor vehicle (2) to provide a practicum for the development of skills in driving an automobile (3) to familiarize students with the various laws, regulations and traffic control devices involved in driving". [9] In the actual course content, 400 minutes (24.44%) of teaching are devoted to attitudes (first objective) and 200 minutes (11.11%) to the third objective, technical skills. Most of the instructor's time (1200 min. or 66.66%) is spent transmitting knowledge, which cannot be foreseen from reading the objectives. Only the third objective is concerned with knowledge, at the specific level of "laws, regulations and traffic devices". As a result, there is a discrepancy between formulated objectives and actual course content (See Table 6 for a breakdown of the percentage of individual objectives reflected in the four courses of study discussed so far).

Table 6. Percentage of individual objectives carried through in the course of study

Provincial Curriculum	Objectives	Course of study
Quebec	1. Develop a positive attitude	6.66%
	2. Develop qualities which will make conscientious drivers	---
	3. Knowledge	83.00%
Ontario	One objective :	
	knowledge	75.00%
	skills	---
	attitudes	11.11%
Alberta High School	1. Attitudes	24.44%
	2. Skill development	11.11%
	3. Laws, regulations	66.66%
Saskatchewan	1. Insights, motivation, good attitudes	10.00%
	2. Knowledge, skills	90.00%
	3. Ability to make wise decisions in situations leading to dangerous driving (follows from #1)	---

The last two curriculums include courses of study but no overall objectives: Prince Edward Island's high school Driver Education Program [10] and Alberta's commercial Driver Training Curriculum Guide. [11]

The P.E.I. curriculum (see Table 7) has a thirty-hour theoretical component which is divided into 10 units and 36 lessons ; 13 of these lessons have yet to be developed. The course of study is based on the task analysis method, by which tasks are broken down into sub-tasks and analyzed in detail. The student, by progressively mastering several series of sub-tasks, gradually develops a sense of his position in the road system and learns to be a knowledgeable participant in that system. This student-system interaction is central to the course, of which 64% involves acquiring knowledge, and 36% developing technical abilities. No time is set aside to explore or affect student attitudes.

The Alberta commercial DE curriculum divides into four untitled, loosely-structured units to be taught within a 10-hour period (See Table 8). Subjects cluster around these units without any particular logic; each unit comprises a variety of elements which the instructor must raise in a short time. No pedagogical approach is recommended, nor is it clear which relationship should dominate : student-instructor or student-system. Attitudes and technical skills each receive 7% (40 min.) of attention, while 67% of the course (380 min.) is centered on the transmission of knowledge. Table 9 offers a comparison of the last two curriculums in terms of typical objectives met by them.

Table 7. Prince Edward Island Course of Study

Driver Education Program (1981)

Unit	Lessons
1. The Transportation System	2 : Objectives of course and components of transportation system ; requirements for Driver's License and responsibilities of Drivers
2. Preparing to Drive	2 : Seven systems ; purpose of pre-driving checks and procedures
3. Basic Manoeuvres	9 : Procedures for all basic manoeuvres used in driving a car
4. Decision-making in Driving - Perceptual Development	4 : Effective visual habits ; Smith System ; IPDE Concept ; 2-12 Adjust System
5. Driving Laws - Man-Made	3 : How to obtain and keep driver's license; traffic laws ; signs, signals and roadway markings
6. Highway Conditions and Natural Laws	5 :
7. Vehicle Performance and Maintenance	3 : Vehicle systems ; importance of vehicle inspection and maintenance ; ——— .
8. Other Highway Users	1 : Anticipating actions of other highway users
9. System Failures	4 :
10. Driver Performance	3 :

Table 8. Alberta Commercial Course of Study

Driver Training Curriculum Guide

Unit I : (Introduction, information to the students) explanation of vehicle control, basic habits, basic skills, basic manoeuvres, attitude necessary for defensive driving

Unit II : Rules, regulations and traffic laws, vision and driving, city driving, freeway driving

Unit III : Hazardous conditions, emergency driving procedures, crashes, insurance

Unit IV : Trailering, motorcycle safety, railroad crossing safety, driver impairments, basic vehicle mechanics and maintenance (general review, discussion and questions, written evaluation)

Table 9. Degree to which typical objectives are met in two provincial curriculums, expressed in percentages

Provincial Curriculum	Knowledge	Skills	Attitudes
Prince Edward Island High School	64%	36%	--
Alberta Commercial	67%	7%	7%

DISCUSSION AND CONCLUSION

Examination of these six curriculums has led to the conclusion that there is a considerable amount of discrepancy between objectives and content in all cases. This casts doubt on the internal consistency of the various curriculums.

Two alternatives come to mind (1) the objectives which tend to recur from one curriculum to another are faulty and should be replaced by workable objectives which course contents already meet (2) course contents should be re-examined and redesigned in the light of actual and other, more desirable objectives.

The second alternative has formed the basis of the Dekalb County Research Project [12a, 12b]. However, to date, the project has not been shown to have any statistically significant accident reduction effect.

Two questions, one relating to age, the other to time, arise from examining these curriculums. First, the content of existing DE courses may be valid for all age groups but the successful transmission of this content requires a variety of pedagogical approaches, since it is now a known fact that adults and young people learn in different ways. However, each curriculum examined proposes one universal approach for all the students. Won't this lessen the achievement of desired results?

Secondly, is it realistic to hope to inculcate safe attitudes in 20, 30 or 40 hours of practical and theoretical course work? Little time is actually spent developing good attitudes, despite their predominance in the general objectives of most curriculums. In any case, the whole question of safe attitudes should be part of ongoing discussions as a driving course unfolds.

In summary, Canadian curriculums, as blueprints of Driver Education, are riddled with inconsistencies. These must be eliminated if objectives, course contents and other aspects of DE programs are to come together and have the desired impact on future generations of drivers.

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